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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,861

12/06/2005

Hans Lonsinger

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EXAMINER

KREINER, MICHAEL B

ART UNIT

PAPER NUMBER

4174

MAIL DATE

DELIVERY MODE

08/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,861	<b>Applicant(s)</b> LONSINGER ET AL.	
	<b>Examiner</b> Michael Kreiner	<b>Art Unit</b> 4174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 28-54 is/are pending in the application.
- 4a) Of the above claim(s) 39,46 and 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,28-38,40-45 and 48-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/6/05 and 6/11/08</u> .                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Species I in the reply filed on 6/11/2008 is acknowledged. The traversal is on the ground(s) that certain claims read on multiple figures, and therefore are generic. Aside from claims 39, 46, and 47 of Species II, which applicant concedes do not read on elected Species I, claims originally restricted are rejoined.

The requirement for claims 39, 46, and 47 is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **1, 2, 30, 32, 33, 37, 38, 43, 44, 48, and 49** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 1, "Wing, especially lifting wing of an aircraft" renders the claim indefinite, since it is unclear what sort of wing is being claimed.

In claim 2, line 2, it is unclear how "the flexible region," which is an area of the wing, can be arranged obliquely relative to the chord direction of the wing on which it is defined.

In claim 32, lines 9-11, it is unclear which direction is intended in the phrase "[the torsion boxes] are changeable in their shape in a direction perpendicular thereto in the sense of a prescribed change of the wing profile."

In claim 33, line 7, it is unclear what “the vertically spaced apart connection location” is spaced apart from.

In claim 37, line 4, the phrase “on the one hand” is idiomatic and improper, since the alternative option it calls for never arrives. Taken literally it lacks antecedent basis.

In claim 38, line 10-11, it is unclear what the “connection region spaced apart in a vertical direction” is spaced apart from.

In claims 43, 44, and 49, the phrase “and/or” renders the claims indefinite, since it is unclear whether the first element, the second element, or both, are being claimed.

In claim 48, it is unclear where exactly the jointed connection is attached in the phrase “secured with one side via a first jointed connection on the first cover skin or near the first cover skin on the side of the box elements, especially on the joint region and/or on the pivot joint.”

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims **1, 2, 30, and 31** are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (U.S. Pat. No. 4,429,844).

Regarding claim 1, Brown teaches a wing (10 in fig. 2), especially lifting wing of an aircraft, with changeable profile, which extends in wing chord direction (labeled FORWARD in fig. 2) extending essentially in flow direction and perpendicularly thereto in wingspan direction

Art Unit: 4174

(labeled INBOARD and OUTBOARD in fig. 2), and comprises a first cover skin (top portion of 12 in fig. 2) and lying opposite thereto a second cover skin (bottom portion of 12 in fig. 2), and comprises a leading edge region (forward portion of 12 in fig. 2) and a trailing edge region (14 in fig. 1) with respect to the wing chord direction, as well as a wing tip region (18 in fig. 1) at the end of the wing (10) with respect to the wingspan direction, characterized by a flexible region (bounded by 18, 22, and 24 in fig. 1) arranged close to the wing end, through which the profile of the wing tip region (18) is adjustable in a direction that includes both a component in wing chord direction as well as a component in wingspan direction (as the profile of the wing tip is adjusted, the wing tip's depth is increase and its length is shortened, causing adjustment for the outboard end, shown in figure 2 as dashed line 18, which has components in the wing span and wing chord direction, col. 4 *l.* 62-66).

Regarding claim 2, Brown teaches that the flexible region (bounded by 18, 22, and 24) is arranged obliquely relative to the wing chord direction (the flexible elements of the flexible region (30 and 32 in fig. 2) are arranged oblique to the wing chord direction, and furthermore, the flexible region itself has components oblique to the wing chord direction, as shown in fig. 2).

Regarding claim 30, Brown teaches that the leading edge region (forward portion of 12) extends with a positive sweepback angle to the wing chord direction (shown in fig. 1), and that the flexible region (bounded by 18, 22, and 24) is arranged essentially perpendicularly to the leading edge region (flexible region's inboard boundary 24 is perpendicular to the length of the leading edge, which extends along the sweepback angle, as shown in fig. 1).

Art Unit: 4174

Regarding claim 31, Brown teaches that in the flexible region (bounded by 18, 22, and 24) the camber of the wing is adjustable while changing the curvature of the first cover skin (12) and of the second cover skin (12) (col. 4 *l.* 28-33).

6. Claims **1, 2, 29-38, 40-45, 48-54** are rejected under 35 U.S.C. 102(a) as being anticipated by Perez (U.S. Pat. No. 6,644,599).

Perez teaches a wing with a first (55a in fig. 3) and second (55b in fig. 3) cover skin that has a flexible region at the wing tip (the entire wing, including a region near the wing tip, can be constructed such that the wing is flexible, col. 2 *l.* 64-67). The flexible region of the wing tip (8 in fig. 1) is shown as box segments oblique to the wing chord direction and essentially perpendicular to the leading edge region along the leftmost edge of the wing in figure 1. The flexible region comprises several torsion boxes (53 in fig. 3) arranged next to one another and formed by the first and second cover skins, as well as at least one spar (52 in fig. 3) (abstract). The torsion boxes are connected to vertebrae (61 in fig. 3), which are connected at the intersection of the transmission elements (64) and spars (52) by various joint mechanisms (68 and 69) (shown in fig. 3-7). These joint mechanisms are also connected to the first and second cover skins (shown in fig. 4-7). The vertebrae are also connected to a drive chord (62 in fig. 3), whose length is changed using a control signal (abstract). As the length of the drive chord increases or decreases, the torsion boxes flex with respect to each other in a manner that changes the wing tip's profile (figs. 8-10). As the first and second cover skin move relative to each other, a spacer (81 in fig. 3) and an end piece (77 in fig. 3) hold the two skins in connection with each other as the flexible region flexes.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Campanile et al. (U.S. Pat. No. 6,010,098) teaches a wing with changeable cambering comprised of a series of spars connecting a top skin and bottom skin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kreiner whose telephone number is (571)270-5379. The examiner can normally be reached on Monday-Thursday 7:30am-5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on (571)272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. K./

Examiner, Art Unit 4174

Application/Control Number: 10/559,861

Page 7

Art Unit: 4174

/JACOB CHOI/

Primary Examiner, Art Unit 2885